Joint Publication 3-0
Appendix D

Fundamentals of Joint All-Domain Operations

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APPENDIX D
FUNDAMENTALS OF JOINT ALL-DOMAIN OPERATIONS

"With many calculations, one can win; with few one cannot."

Sun Tzu, The Art of War

1. Introduction

a. The Expanding Operational Environment (OE)

(1) Technological advancements, disruptive changes in space, cyberspace, the electromagnetic spectrum (EMS), and the increasing digitization of information characterize the expanding OE and they are fundamentally changing the character of warfare. Military forces are more digitized and interconnected, allowing enemies to employ new capabilities. These capabilities create new threats that cross geopolitical and physical boundaries through space, the EMS, and the information environment (IE). Advancements in artificial intelligence, biotechnology, cloud computing, space, and other mission-relevant technology warrant close attention. These changes are driving joint force commanders (JFCs) to adapt and develop concepts of operations (CONOPS) that account for fast-paced and dynamic circumstances.

(2) The proliferation and density of technologies in the commercial and government sectors are expanding the OE. Achieving influence does not always require large investments in traditional military capabilities. Developments in space, cyberspace, the EMS, and information combined with new doctrines and capable leaders can provide marked increases in an adversary's military effectiveness.

(3) The generation of misinformation and disinformation complicates the expanding OE. They are relatively easy to employ, and an enemy's use of these techniques can equal, bypass, or neutralize traditional military power.

(4) The joint force organizes as unified commands with areas of responsibility (AORs) and transregional responsibilities. Despite the challenges of the expanding OE, the joint force functions as an integrated force with common and mutually supporting objectives across multiple AORs, throughout entire theaters, and in specific operational areas (OAs) simultaneously horizontally and vertically in the command structure. JFCs may execute mutually supporting global, theater, and joint operations area (JOA)-specific CONOPS in concert.

b. Joint Warfighting

(1) Joint warfighting requires JFCs to integrate forces and synchronize actions throughout their OAs to create military advantage. Armed conflict against a capable enemy presents significant challenges for the joint force, particularly in the expanding OE. Also,

joint warfighting requires the continuous employment of force, employing various ways and means in geography ranging from a single JOA to multiple AORs. A JFC's joint all-domain operations (JADO) mission can focus on:

(a) Surviving enemy attacks, protecting forces, and conserving enabling capabilities.

(b) Degrading enemy intelligence, surveillance, and reconnaissance (ISR) effectiveness.

(c) Disrupting enemy command and control (C2), cyberspace capabilities, and targeting systems.

(d) Degrading, disrupting, and defeating enemy anti-access/area denial systems.

(e) Attacking enemy operational-level centers of gravity.

(f) Maintaining freedom of action in all domains.

(g) Achieving and maintaining EMS availability.

(h) Gaining an understanding of the OE and situation.

(i) Consolidating gains and transitioning to the next appropriate action.

(2) JADO allows JFCs to achieve joint warfighting success despite ever-increasing challenges. This appendix provides JFCs with considerations for planning, executing, and assessing joint operations that require an all-domain approach.

c. **JADO**

(1) Currently, no single joint functional component commander or echelon of command has assigned or attached capabilities or self-contained C2 to conduct joint warfighting across all domains at all times throughout their OA. The terms and attributes of JADO are based on the accelerating introduction and contributions of joint capabilities in all domains that require joint integration for joint and theater headquarters (HQs) spanning regions, theaters, and multiple combatant command (CCMD) AORs. Previously, joint doctrine sought to guide commanders in deconflicting operations. This deconfliction enabled components to focus Service-centric or domain-specific approaches in discrete or segregated OAs. In cases where the joint force enjoyed complete overmatch throughout the theater and beyond, this approach may have been acceptable. However, against a capable enemy, this approach is obsolete. In fact, this is how our enemies want the United States to fight. In the most demanding conditions, joint operations must be more than deconflicted Service component actions. Joint warfighting requires joint operations with all-domain qualities and attributes working in unison to survive and succeed.

(2) In planning an operation, JFCs evaluate their available forces against the enemy's capabilities and expected actions. The JFC determines how and when to integrate component forces across all the domains, the IE, and EMS. In many cases, massing effects are a function of multiple commanders converging the right capabilities at specific decisive points. With the effects identified, the JFC assembles and rehearses the forces to achieve their intent.

(3) The JFC directs subordinate and supporting HQs to shift efforts as necessary during execution. There may be times when one component command initially has priority for joint electromagnetic spectrum operations (JEMSO), space, ISR, and counterair. In short order, JFCs can shift priorities to make that component command the priority for military deception (MILDEC), cyberspace operations, military information support operations (MISO), and survivability, while directing another component command to have priority for JEMSO, ISR, and space. JFCs depend on situational awareness to know when and where to weight efforts and shift prioritization.

(4) JADO bring together diverse but mutually supporting joint capabilities that outperform and outmaneuver the enemy. Operating within a coherent CONOPS, these capabilities enable JFCs to make better decisions and make them faster. JFCs respond to evolving situations by modifying targets, task organization, control measures, and OAs throughout execution. While accounting for both enemy and friendly capabilities, JFCs strive to create synergy by integrating all capabilities. To fight successfully, JFCs collect vital information, accurately and quickly analyze it, and then rapidly and securely disseminate it to the right commanders for action. Through C2, the JFC ensures that subordinate commanders have similar situational awareness.

(5) JFCs develop CONOPS that drive, enable, and protect their schemes of maneuver, fires, and logistics by integrating space, cyberspace, informational, and EMS capabilities. They identify the most important information, make it actionable, avoid the enemy's strengths, and attack their weaknesses. JFCs identify the targeting priorities and align tasks that provide the best opportunity to generate the desired effects. Then, they converge the right capabilities at decisive points. The JFC's planning results in a coherent and executable integrated tasking order. The following sections characterize planning, targeting, organizations, C2, and assessment for JADO.

2. Planning for Joint All-Domain Operations

a. JFCs initiate planning for JADO with a current appreciation of the OE, a comprehensive understanding of the enemy's order of battle, and likely courses of action (COAs). JFCs focus their CONOPS upon the enemy's relative position or assessed weaknesses rather than from their position of relative strength. They direct all-domain planning to create and exploit joint force advantages while targeting enemy vulnerabilities. Planning for JADO enables JFCs to recognize and seize opportunities while mitigating risk.

b. JADO can create geographic, temporal, informational, and psychological effects and advantages that degrade enemy capabilities and their ability to make effective

decisions. Advantages from individual JADO are often temporary in duration or limited in geographic scope, but successes from multiple JADO can accumulate. JFCs can use sequential actions to enable follow on JADO. In terms of purpose, JFCs' JADO objectives may include seizing and occupying terrain, disrupting enemy key C2 nodes, attacking multiple decisive points and operational centers of gravity, neutralizing enemy long-range fires, contesting enemy maneuver to deny objectives, and setting conditions for additional offensive operations.

c. There is no standard or one-size-fits-all planning framework for the unique integration and synchronization requirements for the specific conditions of each JADO. Previously, planners have successfully integrated capabilities from the land, air, and maritime domains in joint operations. For JADO, JFCs rely on planners to expand upon traditional CONOPS planning. In developing all-domain CONOPS in concert with intelligence preparation of the battlespace processes, JFCs should increase emphasis on several domains, joint functions, and activities to inform planning and decision making. This guidance informs the schemes of maneuver, fires, and logistics and drives targeting. These areas of increased emphasis include space, cyberspace, EMS, information, and protection, including operations security (OPSEC) and MILDEC.

d. **Intelligence.** Using intelligence preparation of the battlespace, intelligence planners provide JFCs with both intelligence and estimates on the ways and means they can address gaps by developing intelligence requirements that fulfill JFC intent. This enables JFCs to visualize, describe, and direct operations, ultimately acknowledging enemy strengths and exploiting enemy weaknesses. JFCs ensure integration and optimal employment of national-to-tactical collection capabilities and associated processing, exploitation, and dissemination systems; federated analysis and production centers; and appropriate collection architectures to support joint operations. JFCs rely on intelligence planners to consider the following for CONOPS development:

(1) Enemy C2 architecture. JFCs examine existing gaps and seams in the C2 architecture that, when exploited, complicate enemy decision making, disrupt leadership structures, and interfere with horizontal and vertical integration across the enemy force. Enemies rely on a high degree of C2 redundancy within an integrated C2 architecture. Planners examine the enemy's speed of decision-making that drives their operations tempo and ability to outpace friendly actions and dictates the course of the conflict from their perspective. JFCs disrupt this process by identifying and targeting enemy vulnerabilities to degrade the enemy's tempo and achieve a position of advantage. Such disruption may allow JFCs to generate temporal and spatial gaps and exploit seams. JFCs can take advantage of these with delays, disruptions, deceptions, and surprises to gain an advantage over the enemy.

(2) Enemy propensity for operational risk taking or risk aversion. Some enemies may avoid operational-level risk if they assess a lack of relative advantage. Conversely, other enemies may accept risk when they assess a danger of losing a perceived advantage. This risk aversion or risk acceptance profile is relevant to JADO CONOPS development because it provides indicators for intelligence planners. JFCs use the enemy's risk aversion

and risk acceptance profile to inform their MILDEC and OPSEC assessments, which enables them in refining their CONOPS.

(3) Enemy capabilities, intentions, and methods to employ information, cyberspace, and the EMS as they relate to all domains. An all-domain intelligence estimate identifies the highest payoff targets; of particular importance are threat capabilities in space, cyberspace, the EMS, and the IE. Disrupting, degrading, or destroying these targets maximizes an operation's likelihood of success. Therefore, the intelligence staff's identification of high payoff targets simultaneously drives JFCs' targeting and informs CONOPS development.

(4) Intelligence planners assess how the enemy attempts to control its internal information. Intelligence planners, along with joint and component cyberspace forces identify countermeasures that govern internal sharing, concealing, and integrating critical capabilities, such as all-domain capable and logistics support forces.

(5) Enemy dependence on space-based sensors, offensive or defensive space capabilities, and radar detection. These dependencies include capabilities that enhance ISR. JFCs recognize that the enemy uses space-based systems and seeks to deny the United States, allies, and partners use of space or to complicate operations in all other domains. Planners account for the enemy's ability to deny space-based system access by employing ground-based missiles, signals jamming, and ground-based, directed-energy weapons aimed at satellites to support their counterspace efforts. Space planners provide the JFC with space domain awareness of orbital, terrestrial, and link segments. Space domain awareness integrated with the other domains provides the JFC with comprehensive information on enemy space operations and information activities. This awareness assists planners to understand and attribute enemy actions against friendly space capabilities.

(6) Enemy antiaccess and area denial capabilities. JFCs evaluate the enemy's antiaccess and area denial actions, activities, and capabilities. The evaluation accounts for the enemy sensor's access, fidelity, accuracy, and timeliness. JFC planning considers the enemy's overall ISR capabilities and their ability to target.

(7) The aggregate and specific risk from enemy capabilities and operations. JFCs analyze the impact of enemy capabilities and operations on friendly forces. After developing an appreciation of the risks, JFCs leverage opportunities, mitigate risk, and integrate allied and partner capabilities.

For more information, see Joint Publication (JP) 2-0, Joint Intelligence, *and for more guidance on joint intelligence planning formats and architecture, see Chairman of the Joint Chiefs of Staff Manual (CJCSM) 3130.03,* Planning and Execution Formats and Guidance.

e. **Information.** Information planners provide JFCs with estimates on the ways and means by which they can leverage information that reinforces operations in the physical domains and cyberspace and use those operations to gain informational advantage. With this understanding, JFCs can attack information to disrupt enemy systems, processes, integration, capabilities, and decisions. Additionally, this information aids in exploiting

enemy weaknesses. The JFC's approach includes using information forces to accomplish missions for objectives. JFCs rely on information planners when considering generation and preservation of information that enables inform, influence, and attack activities for all-domain CONOPS development. This includes:

(1) Level or degree of artificial intelligence, including machine learning, and the availability of data for data-informed decision making. This includes the potential for near-real-time data collection and analysis.

(2) Methods, movements, and transmissions of friendly, enemy, and neutral information. This includes understanding how enemies and neutrals:

(a) Transfer information within the IE.

(b) Influence perceptions, beliefs, attitudes, and behaviors.

(c) Distinguish what information is most relevant and how they characterize its sources.

(d) Use networks and systems to gather visual, radar, infrared, electromagnetic noise, and social signatures.

(e) Employ active and passive information protection measures.

(3) How friendly forces:

(a) Understand the inherent informational aspects of the JFC's operation.

(b) Protect their morale and will.

(c) Leverage information to inform, influence, and attack relevant actors.

(4) Public affairs, civil affairs, and MISO forces advise on the consequences of joint force actions on public perceptions, attitudes, and beliefs. Public affairs planners use timely and accurate information for narratives that differentiate between misinformation and disinformation. Additionally, public affairs planners distinguish between credible and non-credible information sources. They contribute to CONOPS development by:

(a) Ensuring narratives align with and support the JFC's objectives.

(b) Facilitating informed perceptions about military operations.

(c) Countering disinformation and propaganda.

(d) Correcting misinformation.

(5) **Level of MISO.** JFCs leverage influence activities and their effects on the enemy commander's decisions. MISO planners propose effects in the IE by analyzing

human factors and developing plans that enhance the JFC's operation. MISO planners and operators contribute to CONOPS development by:

(a) Identifying the social, cultural, linguistic, psychological, and technical factors that can impact the JFC's success.

(b) Identifying enemy leadership vulnerabilities, susceptibilities, and accessibility for exploitation.

(c) Employing information that disrupts enemy decision making, C2 effectiveness, morale, and will.

(d) Preventing neutral audiences from supporting or sympathizing with the enemy.

(e) Integrating informational power with physical military activities.

f. **Cyberspace.** As an essential part of JADO, cyberspace operations planners provide estimates to JFCs on how to integrate cyberspace capabilities; counter the enemy's use of cyberspace; identify, secure, and access key terrain in cyberspace; and operate in a denied environment. JFCs rely on cyberspace operations planners and operators to consider the following for all-domain planning and CONOPS development:

(1) Unattributable and clandestine enemy operations in cyberspace that may affect the JFC's ability to C2 operations.

(2) Profiles of system users, administrators, and their relationships.

(3) Organic and nonorganic assets, locations, and detailed capabilities of those assets.

(4) Legal, policy, or operational limitations affecting allies and partners.

(5) Lead time for appropriate interagency coordination, deconfliction, and synchronization.

(6) Joint and multinational automated systems' weaknesses to cyberspace attacks, including data poisoning. Additionally, planners identify physical signals from sounds and vibrations that can impair automated systems.

(7) Access to the intended targets, authority to engage the targets, and the capability suited for the intended target.

(8) The consequences of enemy cascading, compounding, and collateral effects. These activities can travel through higher-level systems, subordinate systems, and adjacent systems and generate additional risk to the JFC's objectives. For instance, enemy malicious cyberspace activity targeting a military asset on a shared network with other

military, government, corporate, and private activities can have unintended or collateral consequences for all other users of that shared network.

For more information on cyberspace operations planning formats and architecture, see JP 3-12, Joint Cyberspace Operations, *and CJCSM 3130.03,* Planning and Execution Formats and Guidance.

g. **Space.** Space planners provide JFCs with estimates on the ways and means with which to integrate space capabilities. These considerations include operational requirements; limitations; liaison requirements; legal constraints; and directed energy, nuclear detonation, and electromagnetic threats. To minimize risk and generate opportunities, planners require an understanding of friendly and enemy space-enabled capabilities. Planners estimate the support required from space capabilities and plan space-related fires across organizations. JFCs rely on space planners to consider, identify, and locate the following for all-domain CONOPS development:

(1) Enemy factors that may pose a risk or hazard to friendly space operations and capabilities. These risks can exist in the orbital, link, and terrestrial segments. Enemy threats include:

(a) Electromagnetic attack against friendly communications, ISR, missile warning, and space domain awareness spacecraft from enemy ground or space-based systems.

(b) Cyberspace attacks that can disrupt or degrade space-based or terrestrial-based C2 functions used to conduct or support spacecraft operations or to collect, process, and disseminate mission data.

(c) Physical attack that takes different forms, depending on the system component under attack. For instance, space planners identify antisatellite weapons which can destroy or degrade a spacecraft. Additionally, space planners account for enemy threats to terrestrial nodes or links.

(d) Capability to disrupt terrestrial-based missile warning and space domain awareness sensors.

(2) The environmental factors when developing primary, alternate, contingency, and emergency communication plans. Space planners determine the level and type of commercial space integration and augmentation required to support an operation. Additionally, they develop time-sensitive target criteria, assess risk, and generate risk mitigation options.

(3) The targeting of enemy space capabilities to support the CONOPS. Examples include offensive and defensive space operations that disrupt, degrade, or destroy the enemy's capabilities to conduct long-range fires, C2, information, intelligence, and movement and maneuver. Space operations planners also include the following:

(a) Enemy space-based ISR supporting long-range fires, warning intelligence, and detection and tracking capabilities. Space planners estimate when enemy ISR systems have adequate access, fidelity, accuracy, and timeliness that present risk to friendly operations.

(b) Enemy space-based positioning, navigation, and timing systems supporting precision guided munitions, remote sensing accuracy, C2, unmanned aerial vehicle operations, logistics movements, and data transport.

(c) Enemy space domain awareness supporting offensive and defensive space operations.

(d) Enemy satellite communications systems supporting C2, unmanned vehicle operations, logistics movements, and data transport.

(4) Targeting an enemy's space forces with reversible or nonreversible effects. JFCs consider all methods to create space superiority and freedom of action.

For information on integrating space operations into all domains, see JP 3-14, Joint Space Operations, *and CJCSM 3130.03,* Planning and Execution Formats and Guidance.

h. **JEMSO.** JEMSO planners provide JFCs estimates on the ways and means they can operate in the EMS. JEMSO planners develop staff estimates that support CONOPS development and selection. JFCs provide subordinate and component commanders with guidance to determine EMS activities and capabilities that guide their planning. During plan development, the JFC staff develops specific tasks and objectives, identifies capability shortfalls, and recommends solutions. JEMSO planners also submit JEMSO-related information requests and ensure plans adhere to the rules of engagement. In traditional CONOPS planning, the JFCs' primary JEMSO concern was spectrum management because the joint force maintained EMS overmatch. JFCs no longer enjoy that advantage against a peer enemy. In the expanding OE, JFCs rely on JEMSO planners to consider the following for joint all-domain planning and CONOPS development:

(1) Integration of JEMSO to exploit, attack, protect, and manage the EMS.

(2) Electromagnetic warfare, spectrum management, and intelligence mission areas to prioritize, integrate, synchronize, and deconflict JEMSO in support of JADO.

(3) Limitations and ramifications of a congested, constrained, and contested EMS, including when, where, and how JFCs exploit these factors to disrupt the enemy's use of the EMS. JEMSO planners evaluate how they can exploit or deny the enemy's ISR and targeting systems. JEMSO planners also evaluate the enemy's ability to deny portions of the EMS use by military, multinational, and neutral actors. As an example, spacecraft provide positioning, navigation, and timing data for forces in the air, land, maritime, and cyberspace domains. Enemy denial of positioning, navigation, and timing data adversely affects the JFC's ability to synchronize precision fires, conduct air interdiction, and provide integrated air and missile defense.

(4) Simultaneous use of the EMS by enemies, allies, partners, neutral parties, and other United States Government departments and agencies. JEMSO planners analyze the EMS consumption from enemies, neutral parties, allies, partners, joint forces, and United States Government departments and agencies. JFCs understand the electromagnetic operating environment to assess and deconflict JEMSO tasks and objectives.

(5) How to disrupt enemy communication systems that enable effective C2. JEMSO planners evaluate how to disrupt enemy situational awareness and maintain this effect as the enemy and the operation evolve.

(6) Enemy EMS surveillance and reconnaissance capabilities (e.g., unmanned aircraft or other systems) to collect joint and multinational force locations, dispositions, and compositions for intelligence and targeting.

(7) How to respond to enemy initiatives in the EMS. JEMSO planners consider the joint force's agility in responding and countering enemy actions in the EMS.

For more information on EMS integration, see JP 3-85, Joint Electromagnetic Spectrum Operations, *and for more on planning formats and architecture, see CJCSM 3130.03,* Planning and Execution Formats and Guidance.

i. **MILDEC.** MILDEC planners provide JFCs with estimates on the ways and means they can decipher enemy beliefs and preferences, identify how to exploit those preferences, influence enemy assumptions to create exploitable perceptions, and focus deception events. MILDEC planners determine joint force vulnerabilities to enemy denial and deception from and across all domains. They help the JFC integrate MILDEC into JADO by denying or deceiving enemy intelligence collection efforts or reinforcing what the enemy wants to believe. For this reason, MILDEC planners focus on the enemy's efforts to deny and deceive intelligence collection efforts. JFCs rely on MILDEC planners to consider the following for joint all-domain planning and CONOPS development:

(1) Deception targets and their associated opportunities.

(2) Deception stories that are more likely to deceive the enemy.

(3) Deception types, techniques, and tactics.

(4) Conduits that apply physical and technical misinformation and disinformation against select organizations, units, groups, or audiences.

(5) Draft measures of performance and measures of effectiveness to assess MILDEC operations.

(6) Establish a collection plan to monitor and assess measures of performance and measures of effectiveness.

(7) Proper sequencing, concept sketches, and accompanying narrative.

(8) Initial assessment of operational risk.

(9) JFCs use MILDEC in conjunction with OPSEC, which are mutually supportive; OPSEC denies the enemy knowledge necessary to exploit friendly vulnerabilities or risk, whereas MILDEC provides countermeasures. For joint all-domain planning and CONOPS development, OPSEC combined with MILDEC can cause enemy intelligence to fail, produce confusion or uncertainty within the enemy's decision making, and indirectly lead neutral actors to question the legitimacy of enemy intentions and actions.

(10) With appropriate authorities, JFCs decide when and how to employ new or emerging capabilities. Efforts to conceal capabilities can force or delay enemy responses, while intentionally revealing them can provoke uninformed enemy decisions, taking advantage of biases, perceptions, or tendencies. Developing military-technical capabilities in secret has been a normal tradecraft to inflict surprise. However, successful JADO now requires consideration of early revelation of select or partial capabilities to effect enemy responses that can temporarily deter actions, delay decisions, create uncertainty, or impose additional costs.

For more information on MILDEC and planning guidance, see JP 3-54, Joint Doctrine for Military Deception, *and CJCSM 3130.03,* Planning and Execution Formats and Guidance.

j. **OPSEC.** OPSEC planners provide JFCs estimates on ways and means to manage detectable signatures and reduce exposure to enemy collection of critical information and indicators. JFCs leverage the OPSEC cycle to identify, manage, and protect critical information. Once identified, staffs incorporate countermeasures to decrease risk of discovery and exploitation. JFCs rely on OPSEC planners to consider the following for joint all-domain planning and CONOPS development:

(1) The enemy's posture, focus, and mostly likely COA. Each of these may change unexpectedly, and planners help JFCs build flexibility in their protection plans by developing simple and adaptive OPSEC measures. Additionally, each JADO mission has different countermeasure requirements across different AORs, theaters, and JOAs. The different countermeasure requirements include trade-offs between capabilities allocated for OPSEC countermeasures and information protection. OPSEC planners determine if sufficient countermeasures are available, integrated, and coordinated in JADO plans to protect critical information. Additionally, OPSEC planners inform the JFC of the risks of C2 between joint, allied, and partner forces in implementing the OPSEC measures.

(2) Friendly vulnerabilities and the enemy's ability to exploit these vulnerabilities. OPSEC planners coordinate with intelligence and protection planners to assess how the enemy might exploit the identified friendly vulnerabilities and then develop OPSEC countermeasures that protect the joint force from enemy collection efforts, particularly when:

(a) Conducting drills and rehearsals, in particular special tactics, training, or pre-positioning artillery and aviation units.

(b) Increasing or decreasing special-purpose forces or introducing new capabilities into one or more AORs or OAs.

(c) Changing force posture and pre-positioning supplies.

(d) Changing reconnaissance and surveillance activities, especially of the joint deployment and distribution enterprise.

(e) Introducing new joint force assets into the network.

(f) Presenting new cryptographic equipment and material or changing signature management procedures.

(3) Indicator characteristics with countermeasures among civil affairs, MISO, public affairs, electromagnetic warfare, combat camera, and cyberspace operations. OPSEC planners recommend the range of countermeasure options to the JFC by linking countermeasures with OPSEC indicator characteristics, such as signatures, associations, profiles, or exposures particular to JADO.

(a) Signatures – The observable actions or identifiable pieces of information that stand out. OPSEC planners recognize key signature properties, such as uniqueness and stability. Each functional activity generates its own set of unique signatures and associations.

(b) Associations – The relationship of an indicator to other information or activities. These relationships help JFCs interpret ongoing activity.

(c) Profiles – The sum of unique signatures and associations of a functional activity. Planners evaluate unique profiles to identify potential types of enemy operations. These profiles minimize the requirement to invest resources for additional clues.

(d) Exposures – The location, time, and interval of an indication. The duration, repetition, and timing of an indicator's exposure can accentuate its relative importance and meaning.

(e) Contrasts – The observed differences between an activity's standard profile and its most recent or current actions.

(4) In support of countermeasures, OPSEC planners provide estimates of the effectiveness of military actions to degrade or disrupt the enemy's ability to collect on the joint force. These actions include strikes against enemy spacecraft, EMS emitters and receivers, signals intelligence sites, radars, fixed sonar installations, reconnaissance aircraft, and ships.

For more information on OPSEC planning formats and guidance, see JP 3-55, Joint Operations Security, *and CJCSM 3130.03,* Planning and Execution Formats and Guidance.

k. **Protection.** Protection planners provide JFCs with estimates on methods to preserve their force's fighting potential through active and passive security and defensive measures, emergency management, and response. The protected assets can vary from physical objects and personnel to the protection of information and other intangible but valuable assets. JFCs direct the degree of asset protection relative to the enemy's targeting capability. Joint functions, operational processes, physical capabilities, and information systems all require protection to survive and accomplish the mission. JFCs rely on protection planners to consider the following areas for all-domain CONOPS development:

(1) The degree to which integration of enemy weapons, sensors, and networks can impact the JFC's CONOPS. Planners catalog actions that disrupt, slow, or limit one or more of the enemy's weapons, sensors, or network capabilities. These actions provide improved protection and survivability profiles.

(a) Planners calculate the enemy's stockpile of available anti-aircraft munitions and develop COAs that deplete their surface-to-air missile inventory using decoys or by inducing targeting errors. This enhances friendly aircraft survivability throughout JADO.

(b) Planners identify probable enemy weapons of mass destruction; these include chemical or biological weapons.

(c) Planners calculate the enemy's stockpile of available offensive drones and missiles.

(d) Planners identify vulnerabilities in enemy ISR systems. JFCs can direct actions to identify and exploit those limitations combined with "hiding in plain sight." The impact can reduce risk to mission and forces.

(e) Planners identify temporal and geographic vulnerabilities and disruptions to enemy defense networks.

(2) The probable detection by specific enemy sensors and associated enemy employment responses.

(a) JFCs account for rapid enemy detection and their lethal or nonlethal employments. For instance, planners implement the appropriate countermeasures for the use of autonomous sensors and weapons systems.

(b) Planners synchronize information with target selection, including the timing, tempo, and type of effect with other activities (e.g., fires, deception, and intelligence).

(c) Planners identify the countermeasures necessary during the timing and tempo of targeting. JFCs implement dispersion countermeasures to reposition, cover, or conceal forces.

(3) Incorporating active and passive defenses for protection mitigates operational risk. These defenses include:

(a) Active defenses that can degrade ground nodes, C2 links, space-based sensors, and the ability to process data.

(b) Passive defense actions that create collection capacity dilemmas for the enemy. They also avoid areas of greatest or expected collection, conduct relocations, use camouflage/concealment, take advantage of weather and terrain, misdirect enemy attention, and divert enemy resources to less important areas.

(4) The enemy's metrics for information integrity and confidence in decision making. Planners anticipate how manipulating, modifying, or degrading information integrity can disrupt decision making and increase reaction times.

(5) The enemy's impact on the CONOPS by incorporating their own countermeasures and active and passive protection measures. JFCs also rely on the staff to synthesize intelligence, information, cyberspace, space, JEMSO, MILDEC, OPSEC, and protection and survivability activities to understand better the changing OE for targeting to support JADO.

l. **JADO Targeting**

(1) Joint targeting remains a continuous, analytic, and integrative process that prioritizes the JFC's objectives, selected targets, appropriate responses, operational requirements, available capabilities, and rules of engagement. JFCs synchronize a broad array of capabilities, information requirements, and the volume and timing of execution, and they account for sophisticated enemies operating in all domains, EMS, and IE. JFCs cannot see, touch, or feel many of the threats in the OE, but JFCs identify and target these capabilities and their enablers as their effects are real and dangerous. Targeting during JADO is challenging, with aspects of the OE that are not visible. Through the joint targeting cycle, JFCs emphasize available resources and tools to create synergy across all domains and AORs. The JFC's direction and guidance require targeting planners to consider actions in all physical domains, the EMS, and the IE to enable and protect the schemes of maneuver, fires, and logistics.

(2) JFCs make targeting adjustments as a product of Step 6, "Assessment," of the joint targeting cycle. At the transition from one JADO mission to another, the JFC adjusts their guidance and intent. For instance, the JFC may determine that the current CONOPS is suitable and that the operational approach is feasible with no change or minor changes. Alternatively, if the JFC determines that the JADO mission and objectives are no longer viable or the operational approach is no longer feasible or acceptable, the JFC may adjust targeting guidance and intent.

(3) JFCs and staffs prepare for JADO based on continuous assessment during planning and execution. JFCs assess JADO during planning to ensure that objectives are feasible.

(4) JFCs are agnostic to the component or agency for tasking and focus instead on deliberate and dynamic targeting and the type of capabilities. Joint targeting objectives emerge from the integration of enemy capabilities and COA. JFCs select targets that include known enemy strengths, critical capabilities and requirements, and critical vulnerabilities. JFCs consider global capabilities from all domains, authorities, and task organizations to achieve objectives and accomplish the mission. JFCs base their guidance on targeting board outcomes such as refined specific target lists within the joint integrated priority target list. JFCs rely on planners to provide the following considerations for targeting:

(a) How best to influence the enemy leadership's decision making and behavior.

(b) Optimizing effects across domains, the IE, and EMS.

(c) Assessing the previous mission, specifically the effects of fires generated during the operation.

(d) Prioritizing, integrating, and synchronizing fires on targets that provide the highest payoff informs the CONOPS and schemes of maneuver, fires, and logistics. Specifically, targeteers identify the high-payoff targets across all domains in the OA, with emphasis on space, cyberspace, the EMS, and IE.

(e) Generating lethal and nonlethal effects. Planners further evaluate indirect, cumulative, cascading, and unintended consequences.

(f) Disrupting, degrading, or destroying C2 nodes and sensors.

(g) Identifying applicable and available assets to accomplish the objectives.

(h) JFCs coordinate with allies and partners for potential impacts to their forces and assets. JFCs establish reporting criteria to enable faster targeting and reduction of potential impacts to allies and partners' operations.

(i) Developing the schemes of maneuver, fires, and logistics based on JFCs' mission objectives and activities.

For more information on targeting planning formats and guidance, see JP 3-60, Joint Targeting, *and CJCSM 3130.03,* Planning and Execution Formats and Guidance.

m. **Schemes of Maneuver, Fires, and Logistics**

(1) The CONOPS' scheme of maneuver is a function of an understanding of the enemy's COA and their available capabilities relative to the JFC's mission. After comprehending the challenges and opportunities for specific mission objectives, JFCs develop their schemes of maneuver, fires, and logistics. JFCs use the CONOPS to govern the development of supporting plans or annexes and articulate how they visualize accomplishing the mission. For a CONOPS' scheme of maneuver, JFCs evaluate all forms

of maneuver across all domains and the IE. However, they consider maneuver in terms of converging capabilities of and in all domains within a JOA, a theater, or across multiple AORs.

(2) JFCs and staffs face challenges and limitations when integrating and synchronizing capabilities from all domains and the EMS. Those challenges and limitations can affect the scheme of maneuver.

(a) JFCs account for the complex synchronization of capabilities across all domains and the IE. Planners identify critical limitations created by highly interdependent capabilities operating over disparate time horizons. With this understanding, JFCs can synchronize those capabilities. When required, planners prioritize effectiveness over efficiency and incorporate redundancies that mitigate risk of a disruption to an interdependent capability for JADO.

(b) JFCs identify opportunities to delegate a mission to a subordinate commander poised for the scheme of maneuver. Designating a component command can improve combat effectiveness, communication, unity of effort, component interaction, and C2. For branch, sequential, or simultaneous operations, the JFC may designate a separate subordinate component commander.

(c) Increases in integration among cyberspace, space, the EMS, information, and MILDEC activities increase requirements on intelligence resources.

(d) Enemy and relevant actors' pursuit of information advantages and decision-making capabilities at different levels of investment may generate gaps and seams for exploitation.

(e) JFCs, staffs, and multinational partners develop assessment indicators for operation planning and execution.

(3) Integrating and synchronizing capabilities from all domains may generate C2 burdens on joint and multinational forces. JFCs provide guidance to joint planners to mitigate burdens, capitalize on opportunities, and synchronize maneuver with:

(a) Joint intelligence processes to describe the various types of intelligence activities to meet the JFC's identified intelligence requirements.

(b) Multinational operations to account for differences in allies' legal obligations, doctrine, organization, weapons, equipment, capabilities, capacities, terminology, culture, politics, religion, language, and objectives.

(c) Joint interdiction operations to deny movement and maneuver and prevent enemies from employing land, air, maritime, space, and cyberspace capabilities while reinforcing units at a time and place of their choosing.

(d) Information activities to affect the perceptions, attitudes, decision making, and behavior of relevant actors.

(e) Collection activities. Depending on the complexity of the JFC's scheme of maneuver, the joint collection management board prioritizes and synchronizes collection activities with maneuver across all domains and other intelligence operations.

(f) JEMSO that includes maneuvering to facilitate use within the OE.

(g) Countering threats to provide friendly freedom of action and protection while denying the enemy freedom of action.

(h) The use of tactical, operational, and strategic fires capabilities.

(4) **Scheme of Fires.** Fires planners develop the scheme of fires, concurrently with the scheme of maneuver, to support the JFC's CONOPS. Fires planners converge lethal and nonlethal effects from all domains around the enemy's positions in support of the JFC's CONOPS. In addition, fires planners maximize cross-domain solutions with adjacent friendly forces.

(a) During deliberate planning, fires planners evaluate all available fires from within the joint task force (JTF), CCMD, other CCMDs, and from allies, partners, and interagency organizations. Fires planners recognize the lead times necessary to incorporate all-domain fires, regardless of their origins or sources.

(b) During dynamic targeting, fires planners implement only the fires that are available during the enemy's vulnerability window. Component planners assign forces, including intelligence collection assets, to specific targets and aimpoints.

(5) **Scheme of Logistics.** Logistics planners develop the scheme of logistics concurrently with the scheme of maneuver and scheme of fires. They recognize that the all-domain scheme of logistics applies to one JADO mission and do not confuse it with the concept of sustainment, which includes effort for the entire conflict. The scheme of logistics incorporates health services response to protect and treat personnel.

(a) Logistics planners account for the available planning and execution time to integrate capabilities from all domains. Logistics planners also account for compressed timelines with time-sensitive targets and the ensuing level of risk. They also provide feedback via assessments for follow-on CONOPS.

(b) JFCs rapidly deploy, protect, and sustain forces in diverse environments. Logistics planners integrate logistics seamlessly, ensuring that resources are allocated efficiently across all domains. Logistics planners fuse intelligence from different agencies and domains to build a comprehensive situational awareness. This enables logistics planners to account for available logistics from allies, partners, commercial sources, government agencies, and interagency sources.

(c) Logistics planners collaborate with health service planners and integrate casualty care and health protection capabilities within the scheme of maneuver and logistics. JFCs prepare for and anticipate a mass-casualty event based on risk acceptance or inadequate defensive measures.

n. **Tasking.** After the JFC approves the CONOPS, including the schemes of maneuver, fires, and logistics, the planners identify the required assets, personnel, and capabilities. Upon finalizing the plans, JFCs issue orders, rehearse and prepare to execute the mission. The primary tasking derived from a plan is the integrated tasking order, which is an order promulgated by a JFC that integrates effects using all-domain fires throughout the OE and then tasking orders to component HQs and other supporting commands. It comprises both theater and global tasking orders created at unified commands to meet operational objectives. JFCs identify global targeting capabilities for tasking while developing the scheme of maneuver, fires, and logistics, and intelligence support to joint targeting. Characteristics of the integrated tasking order include:

(1) Flexible command relationships to facilitate rapid planning and execution from all the components to enable adaptive solutions. Command relationships promote the necessary scope, scale, and speed across all domains and the EMS.

(2) Options to generate appropriate responses to unfolding situations and the enemy's adaptations. JFCs rapidly identify, prioritize, and refine target lists in the OE.

(3) Multiple targeting options through all domains, the EMS, and the IE that provide near real time sensor contributions to targeting solutions (e.g., similar to navigation applications on handheld devices). The application continuously refines the navigational solution to the user, based on a multitude of inputs. Users interface with the navigation applications as both contributors and consumers of the synthesized information for navigation. JFCs assess the OE and expand or refine the attack plan with multiple cross-domain solutions with guidance that establishes which command is in the lead for a particular target when multiple options are available.

(4) The visibility of the highest payoff targets throughout the OE, capability to collaborate battle rhythms, and patience in assimilating different preparation timelines. For instance, space forces organizing to support joint operations in one AOR have associated preparation and transition timelines that are different from the preparation requirements for maritime assets deployed in another AOR.

(5) The availability of all Service component capabilities in the joint targeting process to generate the necessary scale. For instance, planners may deem the bulk of a Service's organic capabilities necessary for the duration of a particular JADO mission but only needed sparingly for subsequent JADO.

(6) An increase in agility between support and supporting relationships for rapid reprioritization of component capabilities. For instance, informed by combat assessment, JFCs reprioritize joint efforts in subsequent tasking.

(7) For integrated tasking order development, JFCs develop requirements, decide the objectives and priorities, build the plan, task organic forces or request for capabilities, execute the mission and assess. During planning, JFCs determine if the absence of requested support or additional capabilities prohibits mission accomplishment or drives risk to unacceptable levels.

o. JFCs rely on planners to generate a thorough understanding of intelligence, information, cyberspace, space, JEMSO, OPSEC, MILDEC, and protection capabilities available to the joint force. This understanding informs the JADO CONOPS, which is a function of many calculations, drives the formulation of the objectives and targeting, and informs the schemes of maneuver, fires, and logistics. Subsequently, JFCs develop the task organization to conduct JADO. The JFC uses the available time to allocate capabilities logically with the requirements, reorganize, resupply, and rehearse.

3. Organizational Considerations for Joint All-Domain Operations

Throughout planning, preparation, and execution, JFCs consider adjustments to joint force HQs, subordinate components, and task organizations based on the mission and OE. JFCs also consider adjusting subsequent JADO for a specific JOA.

a. JFCs organize for mission requirements, which include considerations of the enemy's capabilities. JFCs visualize the threat, assess the mission, develop objectives, define and prioritize activities, assign tasks, define the C2 arrangement, and organize forces specific to the operation. JFCs identify subordinate organizations that fit the visualization and intent and are able to achieve the specific objective and task organize those entities for the execution of JADO.

b. JFCs avoid organizing and planning around domains in isolation. They identify the best combinations of unified action partner capabilities and how they can affect mission success in the aggregate. Service or joint functional component commanders can have significant and mutually supporting impact in all domains. For example, a joint force maritime component commander (JFMCC) might influence the physical or behavioral state of space or cyberspace systems that reside in the land domain. In contrast, a joint force land component commander (JFLCC) can achieve similar results to systems that reside in the maritime domain, such as sea denial.

c. JFCs and planners consider and integrate functional component organizations and augment them with additional capabilities. To achieve this, they identify all organic (assigned and allocated) capabilities and nonorganic capabilities from other JOAs, theaters, AORs, allies, partners, and commercial entities.

d. JFCs task organize forces with joint capabilities down to the lowest appropriate echelon. JFCs identify the mission and objectives to determine the size, scope, and scale of the JADO mission, with the required joint force capabilities to accomplish the objectives. They then decide how to integrate and optimize those capabilities. Supplemented by information sharing, JFCs optimize the desired effects and achieve the objectives of the operation.

(1) When JFCs organize forces with joint capabilities down to the lowest echelon, they also consider and establish changes to task organization and support relationships between components to enable JADO, based on the desired objectives and required effects.

(2) In conjunction with task organization between component forces, JFCs also establish command relationships to subordinate, adjacent, and supporting HQs to enable JADO.

4. Command and Control Considerations

a. JFCs develop CONOPS to task organize, assign responsibilities, and unify actions in pursuit of specific objectives. JFCs analyze their mission, assess the OE, comprehend the enemy's likely actions, identify targets, and describe effects in relation to the mission's objective. JFCs direct the C2 to integrate and synchronize diverse but mutually supporting forces throughout all available domains and, in some cases, multiple AORs, with appropriate coordination according to established command relationships. While the joint force organizes by law into unified commands with physical AORs and transregional responsibilities, it can function as an integrated force with common objectives in multiple AORs, throughout an AOR or theater, and in specific OAs simultaneously, both horizontally and vertically in the command structure. Additionally, CCMDs can organize and C2 subordinates to account for geography and function. Their assigned Service and special operations component forces can operate as theater-joint force component commands, JTFs, or joint force component commands within a JTF. The resultant synergy maximizes combat capability. Integral to the CONOPS, JFCs incorporate allies, partners, and the interagency, as appropriate.

b. Whether in multiple AORs, across an entire theater, or within a JOA, a JFC's synchronized and simultaneous actions in space, cyberspace, other parts of the IE, and the EMS enable precise fires, effective movement and maneuver, and dependable sustainment. When applied against several decisive points, JADO CONOPS can produce shock and temporary advantages against enemy commanders and their forces. JFCs can then employ parallel or subsequent JADO to pursue and exploit those results.

c. **JFCs Incorporate Horizontal or Vertical Integration**

(1) Horizontal integration occurs when multiple JFCs employ mutually supporting fires simultaneously. As an example, the commander of one JTF directs fires in and through cyberspace (i.e., conducts cyberspace attack) within a JOA. In contrast, another JTF commander uses cyberspace fires in another JOA or another AOR, with the cumulative effects contributing to the same JADO mission.

(2) Vertical integration occurs when JFCs from multiple echelons in the same AOR conduct operations with mutually supporting effects. An example would be where a combatant commander (CCDR) with a transregional mission employs fires globally. At the same time, another CCDR uses AOR-wide fires, and a subordinate, theater-level, joint force component commander leverages fires against an enemy within a specific OA.

(3) When directed by the Secretary of Defense (SecDef), JFCs execute mutually supporting global, AOR, and JOA-specific operations simultaneously.

For more information, see JP 3-33, Joint Force Headquarters.

d. **Multiple Supported CCMDs and Multiple AOR Considerations**

(1) In some situations, multiple CCMDs execute joint operations, requiring CCDRs to coordinate and integrate efforts against enemy challenges that transcend AOR boundaries. CCDRs may employ forces globally to arrange cohesive military actions in time, space, and purpose to overwhelm the enemy at multiple decisive points. For global CONOPS, CCDRs seek unity of effort and coordinate global fires through the integration of CCMD-level missions in all domains and multiple AORs. Multiple supported and supporting CCDRs execute these global CONOPS based on SecDef prioritization of efforts across CCMDs. For global CONOPS, JFCs orient on targets without geographic reference to friendly forces operating in other AORs. In most cases, JFCs focus on creating specific effects at multiple decisive points. These decisive points may be thousands of miles apart. The Chairman of the Joint Chiefs of Staff's role as the global integrator becomes increasingly important in synchronizing joint force actions to create the optimal effect on the enemy. SecDef maintains the authority in resourcing and timing forces for the supported commanders.

(2) Operations in multiple AORs may be nonlinear and conducted in noncontiguous areas. The coordination of the timing of action may be more significant than adjacent unit coordination, depending on the nature of the operation. When JADO targeting includes fires in multiple AORs, the global CONOPS enables C2 of CCMDs to operate together to accomplish the objective. The situation, the AOR, and the C2 relationships between CCMDs can be complex. For global JADO, each CCDR contributes their unique C2, capabilities, functional expertise, or geographic advantage. As CCDRs face different challenges, they tailor and organize subordinate forces appropriate to their specific task and AOR.

(3) Planning and prosecution of a global CONOPS depends on the coordination process of global effects. JFCs leverage the global effects coordination process against out-of-AOR threats, including the ability to coordinate and integrate global capabilities, fires, operations, and information to facilitate local, regional, or global effects. This coordination focuses on integrating and prioritizing operations and tasks between CCMDs. The global effects coordination process relies on shared situational awareness across CCMDs' AORs and responsibilities. When necessary, the CCMDs identify opportunities, tensions, and the consequences of action or inaction for any single target or target group.

(a) Global threats extending beyond individual CCMD AORs require persistent collaboration, coordination, and synchronization in the areas of C2, maneuver, fires (lethal and nonlethal), and logistics. Global threats originate beyond the CCMD AOR yet have effects within the AOR. A target does not have to be in a CCDR's AOR for the results of a successful attack against that target to have effects within the AOR or a specific OA.

(b) CCDRs' joint fires element/joint intelligence targeting section nominate targets to joint integrated priority target lists and the global integrated target list. Advanced coordination between CCDRs is essential in planning and executing attacks globally. Working together to realize the potential synergy and payoff offered by global targets,

CCDRs identify, consider, and prioritize global targets nominated on the global integrated target list for prosecution within their AORs.

(c) In CONOPS where CCDRs attack in multiple AORs simultaneously, SecDef guidance drives prioritization of CCDRs' joint integrated priority target lists and timing of each CCDR's operations. In these cases, the CCDRs' supporting and supported relationships enable coordination and integration of global CONOPS. The coordination of actions in time and tempo enables CCDRs to meet SecDef intent for prioritization and timing. Prosecuting global fires optimizes the CONOPS' effectiveness while mitigating risk to friendly forces.

(4) Under some circumstances, a CCDR may simultaneously be a supporting commander for one operation while being a supported commander for another.

(a) The more capable the threat, the more complex the operations and the relationships among CCMDs. CCDRs with broad transregional responsibilities may be the supported CCDRs for portions of their mission. In parallel, these CCDRs may support other CCDRs for different missions.

(b) Multiple supported and supporting command relationships enable the synergy necessary to execute broad actions. Examples of these actions include initiating a counteroffensive or forcing the culmination of an enemy offensive by concentrating fires in one OA or multiple AORs.

(5) For global CONOPS, JFCs may use multiple avenues of approach originating from atypical and dispersed bases. Situational awareness coupled with precision fires frees commanders to act against multiple objectives. The JFCs JADO CONOPS provide a focus on targets and objectives, such as destroying enemy capabilities, seizing critical terrain, or isolating certain threats.

(6) For protection, JFCs rely more on situational awareness, agility, mobility, and freedom of action than on massed defensive assets. With global all-domain operations, JFCs rely on communications, intelligence, mobility, and innovation for logistics. In the CONOPS, a JFC's scheme for logistics may be a function of assets moving with forces or time-on-target delivery.

e. **Considerations for a Single CCMD with an AOR-wide Challenge**

(1) Some challenges require CCDRs to confront enemy actions throughout the AOR and employ forces based on priorities. In these situations, CCDRs retain, establish, and exercise C2 of joint forces at the theater level under the direction of theater joint force component commanders for air, maritime, land, and special operations. The CCDR may designate any Service and special operations components as theater-joint force component commands. The driving factors for establishing theater-level component commands are the objectives and the scope and scale of the challenges and fight presented by the enemy. Within their AORs, CCDRs determine the area and space required to enable tasked-organized forces to operate.

(a) In some cases, the CCDR may not establish a JTF, but retain operational control over subordinate functional commands and Service components. However, the CCDR may provide joint augmentation to ensure effective C2 of joint or multinational forces.

(b) While these theater-level joint functional or component commands can operate across an AOR, some joint force component commanders may organize their subordinate forces as task forces with either regional or functional missions.

(2) The CCDRs synchronize C2 with the other six joint functions. At the operational level of war, this synchronization is the foundation for success in joint warfighting. As described in the previous section, orchestrating the CONOPS between multiple CCMDs across multiple AORs and domains is complex; however, planning and executing cycles of CCMD-level CONOPS through theater-level joint force component commands may be the most demanding type of C2 situation facing CCDRs. Therefore, JFCs spend considerable energy establishing and refining theater C2 systems and command relationships and synchronizing C2 to intelligence, sustainment, movement and maneuver, joint fires, information, and protection.

(3) Theater-level joint force component commands plan and execute operations with assigned or attached forces within their OA. For instance, the joint force air component commander (JFACC) commands air but not naval forces. The challenge for theater-level commands is to converge effects; their subordinate forces may have to operate in the same geographic areas or areas where there may be multiple noncontiguous JOAs. This section describes the current C2 options available for a CCDR to organize around and against an AOR-wide challenge. As required, CCDRs designate the appropriate joint force component commands that enable both vertical and horizontal integration across their AOR.

(4) Theater joint functional component commands (e.g., JFMCC) or component commanders adhere to the CCDR's priorities in the integrated joint targeting cycle. This adherence enables theater-level commanders to facilitate coordination, deconflict actions and areas, and synchronize actions in cyberspace, space, the EMS, and the IE. The joint targeting cycle provides a common framework for meeting AOR-wide or theater challenges. CCDRs use the joint targeting cycle to integrate and synchronize fires and to converge those capabilities at decisive points.

(5) The theater joint functional component commands (e.g., JFACC) enable CCDRs to execute the prioritized activities across the AOR. Joint functional component commands employ assigned and attached forces, prepare supporting plans to CCMD operation plans and operation orders, and execute operations. Directly or through coordination, these JFCs employ forces in the physical domains (maritime, space, air, and land), the IE (which includes cyberspace), and the EMS. The CCDR establishes appropriate staff functions along with subordinate joint commands to integrate and synchronize actions and capabilities across all domains throughout the AOR.

(6) The theater JFACC provides flexibility in managing air assets to meet the CCDR's requirements. The theater JFACC normally operates from a joint air operations center. The joint air operations center has subject matter experts who reflect the capabilities available to the JFACC for tasking and include appropriate component representation. Joint air operations center organizations may differ. Each Service component typically provides organic capabilities designed for C2 of their specific operations and these systems serve as the nucleus for C2 of joint air operations. Elements that should be common to all joint air operations centers are the strategy division, combat plans division, ISR division, air mobility division, and combat operations division. The theater JFACC determines the forces, tactics, methods, procedures, and communications for employment. The JFACC advises and coordinates with the supported theater-level, JTF, and task force commanders on employment and limitations (e.g., logistics). The JFACC assists in planning the integration of support for the supported commanders. Additionally, the JFACC communicates the required support within the organization. To the greatest degree possible, the JFACC optimizes their forces to fulfill the needs of the supported theater, JTF, and task force commanders.

(7) The CCDR designates a theater JFLCC to set the theater and conduct combat operations. The CCDR has ultimate responsibility for the AOR, but the JFLCC plays a significant role in arranging the posture for joint warfighting. Ordinarily, CCDRs designate the Army Service component command as the theater JFLCC. The theater JFLCC conducts C2 through a coordination center. The JFLCC's command coordination center coordinates and consolidates necessary information and provides analysis to ensure unified recommendations on theater JFLCC issues. The coordination center serves as the conduit for theater JFLCC recommendations. When setting the theater, the JFLCC considers establishing and maintaining a robust communication systems architecture, integrating joint efforts, positioning Army and joint logistics materiel forward, and investing in seaports and aerial ports in coordination with civilian authorities or the host nation.

(a) As the JFLCC, the necessary C2 may require joint and multinational HQ augmentation. However, once established, the JFLCC can incorporate additional multinational units and designate subordinate units' OAs. The theater JFLCC has the authority to designate target priorities and timing of fires to integrate and synchronize maneuver, fires, and interdiction within their OAs. As a part of the joint campaign and specific JADO CONOPS, theater JFLCC's C2 operational maneuver units of operational maneuver, conduct offensive and defensive operations. Theater JFLCCs employ subordinates to concentrate combat power in multiple domains or other theater-level commanders' OAs and exploit the outcome of other JFCs' actions.

(b) The theater JFLCC establishes priorities for sustainment among their subordinate forces. In contingency operations, the JFLCC may assume responsibility for the logistic support of all United States land forces. In such an operation, the theater JFLCC requires additional support from organizations of the unified command.

(8) The CCDR can designate a JFMCC to plan and execute joint maritime operations across the theater. As a functional component commander, the JFMCC may

have operational control or tactical control over assigned and attached forces and forces made available for tasking. The JFMCC employs maneuver to employ ready-to-fight combat forces at sea and ashore to achieve positions of advantage over the enemy. The JFMCC typically provides centralized guidance and collaborative plans. Ordinarily, the JFMCC delegates the authority for control and execution of tactical missions to subordinate commanders.

(a) A theater-level JFMCC with AOR-wide responsibilities exercises C2 through a maritime operations center. The commander employs assigned and attached forces through the maritime operations center. The maritime operations center is integral to the commander's decision-making process. It is the JFMCC's central node for the execution and monitoring of all the theater responsibilities. Finally, the maritime operations center provides enduring oversight and planning capability.

(b) The JFMCC has the authority to organize assigned or attached forces to accomplish the assigned mission best, based on the commander's intent, the JADO CONOPS, and Service considerations. The JFMCC assigns tasks and operating areas, prioritizes and allocates resources, manages risk, and publishes operational tasking orders. JFMCC representatives liaise with other components and the joint force HQ to achieve unity of effort.

(9) For special operations, a CCDR can establish a joint force special operations component command. In this case, the commander is responsible for integrating all joint special operations forces' operations. The theater-level C2 responsibilities are normally organic to theater special operations commands (TSOCs), which are sub-unified commands under their respective CCDRs.

(a) TSOCs are operations HQ elements designed to support a CCDR's special operations logistics, planning, and operational C2 requirements. A TSOC can form the core of a JTF HQ for short-term operations and continuously provide C2 for all special operations forces in theater.

(b) During armed conflict, the TSOC can function as a Joint Force Special Operations Component Command. In these cases, the commander is responsible for integrating all joint special operations forces' operations into the CCDR's requirements. The command may itself fill the role of a joint special operations task force or have any number of subordinate joint special operations task forces widely dispersed throughout the AOR to C2 special operations.

(10) In some cases, the CCDR may establish two or more subordinate JTF HQs with JOAs or functions. The theater functional component commanders, along with the CCDR's space, cyberspace, JEMSO, and information staff functions, support the CCDR in JADO CONOPS development. CCDRs ensure continuous coordination and communications between the CCMD's theater joint functional component HQs, including the multiple JTF HQs, throughout the JADO planning, preparation, and execution cycles.

f. **Considerations for a JTF within a JOA**

(1) A JTF is a traditional C2 option in which the CCDR is the JTF establishing authority. A JTF is appropriate when the scope, complexity, or other factors of the operation require capabilities of Services from at least two military departments to address an enemy's specific challenge or threat. A JTF commander normally has a mission with either a geographic or functional orientation with detailed objectives not requiring centralized control of logistics. However, there may be situations where a JTF requires directive authority for common support capabilities delegated by the CCDR. The JTF provides a CCDR with a separate joint force HQ that can focus on a single problem and integrate capabilities with other joint, coalition, and interagency partners. A JTF also allows a CCDR the freedom to focus better on broader theater requirements and activities.

(2) There are several ways to form a JTF HQ. Typically, a CCMD forms a JTF around a Service component HQ or one of the Service component's existing subordinate HQs. Then, the CCDR augments that core with personnel and capabilities primarily from the Services comprising the JTF and appropriate joint enablers. Also, the TSOC or a subordinate special operations forces HQ with the C2 capability can form the foundation for a JTF HQ. CCDRs verify the readiness of assigned Service HQ staff to establish, organize, and operate as a JTF-capable HQ. JTF HQ basing depends on the JTF mission, OE, and available capabilities and support. A JTF HQ can be land- or sea-based, with transitions between both basing options. CCDRs ordinarily assign a JOA to a JTF.

(3) JTF's operations in a JOA usually combine linear and nonlinear operations within contiguous areas of operation within the JOA. JFCs consider the appropriate mix of linear and nonlinear operations based on the OE, the enemy's disposition, and objectives.

(a) In linear operations, JFCs direct and sustain combat power toward enemy forces in concert with adjacent units. JFCs leverage the geometry in linear operations to emphasize the relative position of other friendly forces and the security of rear areas. JFCs also implement linear operations against deeply arrayed, echeloned enemy forces for threats to friendly lines of communication that reduce freedom of action or when information is insufficient to conduct nonlinear operations.

(b) In nonlinear operations, JFCs orient on their objectives without a geographic reference to other adjacent forces. JFCs consider the risk of friendly fire to adjacent friendly forces and converge capabilities through an all-domain CONOPS to mitigate the potential risks for friendly fire incidents. For instance, an air-launched anti-ship cruise missile has a limited potential friendly fire risk against subsurface forces. JFCs incorporate all-domain fires that maximize effects across multiple domains.

(4) When directed and coordinated by SecDef, CCDRs can establish JTFs that focus on enemy threats that may operate in a JOA that crosses AOR boundaries or have requirements to operate across multiple noncontiguous geographic areas. Regardless of the regions, the JTF commander ensures their focus on the CCDR's priorities. Executing warfighting through theater-level joint force component commands places great demands on C2, and the tempo and intensity of JADO within a JOA may be overwhelming.

(5) Forming and task organizing the JTF for JADO is challenging in short notice, escalatory, and reactive situations. To adapt, JFCs adjust operations and organization in response to the situation. Similarly, the JTF commander's mission and C2 requirements impact which joint capabilities the CCDR provides to the JTF. Finally, JTFs integrate with United States Government departments and agencies, multinational partners, and local and regional stakeholders as appropriate.

5. Joint All-Domain Operations Assessment Considerations

The purpose of operations assessment is for the JFC to determine if execution is progressing as planned and if JADO are achieving the expected results. Results from assessment may inform the lessons-learned process, provide input to the risk-management process, and inform mission partners' subsequent decisions. JFCs drive continuous assessment processes to determine operational effectiveness. Based on the assessment process, JFCs consider JADO branches and sequels. JFCs conduct assessments to support decision making, reduce uncertainty, and gauge progress toward operation accomplishment.

a. JADO Assessment

(1) JADO have a wide aperture for assessment due to the JOA characteristics, the quantity of capabilities involved, and the combinations of operational variables. JFCs guide their staffs and subordinates to incorporate operation assessments in planning and execution.

(a) Incorporating operations assessments during planning is a function of the assessment design and data collection plan. Both requirements begin with mission analysis, during which the JFC and staff determine measures of effectiveness and evaluation criteria. These measures emerge from COA development and continue through COA approval, CONOPS finalization, and JADO plan and order development. Viable measures of effectiveness require indicators to track progress. JFCs and staff optimize assessment efficacy when associating indicators with tasks, actions, and objectives. Staffs provide the commander's critical information requirements, which are indicators of progress or regression. Lastly, credible assessments support follow-on COA development, commander's decision making, and branch planning. The joint force conducts an appraisal of current assessments. The appraisal helps identify and eliminate duplicating efforts that may already provide information that could benefit both the JADO assessment and the assessment's initial purpose.

(b) Conducting operation assessment during execution requires data to analyze, interpret, and provide recommendations. Assessment can occur when actions from each echelon nest with assessments between adjacent levels. Each component forwards its assessment to the higher commander for integration. JADO assessment relies on higher and subordinate HQs, interagency and multinational partners, and other stakeholders. An assessment working group integrates these inputs to produce recommendations for how the JFC can adapt to remain on track. The staff presents these recommendations to the commander during assessment boards. This approach provides

perspective, insight, and the opportunity to correct, adapt, and refine operations during execution. Equally important, theater-level JFCs and staffs conduct assessments that focus on broad operational-level fires and objectives, which may contrast with assessment at the tactical level with a focus on task completion. Despite the differences, commanders ensure tactical-level assessments nest with operational-level assessments.

(2) Because it impacts all domains, JADO assessment incorporates inputs from intelligence, information, cyberspace, space, the EMS, MILDEC, OPSEC, and protection activities. In doing so, JADO assessment considers all relevant friendly, enemy, and neutral individuals, groups, and populations.

For more general information on operation assessments, refer to JP 5-0, Joint Planning. *For traditional but more specific assessment procedures, refer to JPs on intelligence, information, cyberspace operations, space operations, JEMSO, MILDEC, and OPSEC.*

b. **JADO Assessment Limitations**

(1) JADO planning requires assessment and risk mitigation. JADO planners develop these indicators during planning and monitor them closely during execution. Importantly, assessment is an inexact process requiring JFCs and staff to navigate uncertainty within complete and contradictory information. Therefore, assessing any JADO mission has limitations, and JFCs understand the limitations and implied risks.

(2) The volume, timing, and interdependent relationships associated with JADO activities require indicators that define, measure, and monitor progress. Planners consider these indicators for JADO activities that occur sequentially or near simultaneously; they also need them for the number of interdependencies existing within domains, functions, and capabilities. When developing indicators, JADO planners begin with the commander's critical information requirements to guide collection and assessment activities. JADO planners also acknowledge indicator limitations in terms of causality, linearity, and transparency. For example, some indicators may not have an identifiable cause-and-effect relationship, nor is it possible to always reduce indicators into smaller parts to add the parts later into a unified whole. Finally, some indicators are transparent in short time horizons or take too long to measure progress or regression.

(3) The expanding OE, and by extension, the expanded considerations for desired objectives planned and executed in joint operations, requires greater integration of unified action partners.

(4) Increases in domain and functional specialization coupled with the interdependencies between cyberspace, space, the EMS, information, and MILDEC increase requirements on intelligence resources. This affects how JFCs prioritize intelligence collection, analysis, reporting, and dissemination.

(5) Assessing JADO requires the ability to detect change, and these changes require time. JADO produce changes. Some indicators emerge slowly, while others appear quickly. Lethal effects tend to be more observable, while nonlethal effects might not be readily apparent.

6. Looking Ahead: The Future of Joint All-Domain Operations

a. JFCs are not altering the **what** of joint operations. Joint warfighting against a peer enemy requires the integration of all domains. However, **how** JFCs plan, execute, and assess a joint all-domain operation requires a comprehensive, collaborative, and evolutionary advancement in the approach for JFCs to succeed against our peer enemies.

(1) JFCs require relevant insight and their staffs must train to plan, execute, and assess joint operations using the capabilities inherent in all domains. CCMD-level exercises are ideal for training JFCs, their staffs, and subordinate commanders. JFCs train with commands equipped with informed, collaborative, and purposeful C2 structures and processes. As JFCs become more familiar with fighting in the expanding OE, they analyze and understand the OE faster and adapt more rapidly to changing circumstances. This understanding enables JFCs to recognize the range of possibilities and rapidly adjust to subsequent joint operations.

(2) JFCs build the trust and understanding required for successful mission command. Cross-service relationships, collaboration across domain seams, a culture of learning, and leadership development through education, training, and experience are essential to prevail against a peer enemy.

(3) The JFC's staff, with emphasis on the chief of staff, requires a similar training program as the JFC. This training should begin early in a Service member's career to eliminate Service bias and a component-specific view of assets inherent in all Services. Through this collaborative training, the joint force cultivates the required leadership to successfully plan, execute, and assess JADO.

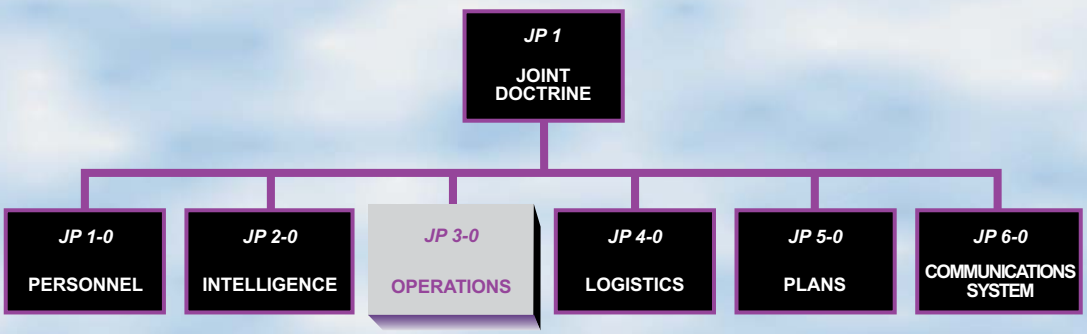
b. JADO can range in scope and scale from globally integrated operations across multiple CCMDs to a JTF with specific tasks within a defined JOA inside a CCMD AOR. JFCs' capability to refine, adapt, and transition JADO throughout execution enables them to maximize the potential of their forces. In the future, JFCs will execute JADO utilizing a different approach to task organizing, OAs, and control measures to converge capabilities and repeatedly create the necessary effects.

(1) JFCs leverage integrated targeting cycles that synchronize and unify all available capabilities from all domains to create lethal and nonlethal effects at multiple decisive points instead of domain-centric or Service-specific targeting pursuing parallel but segregated efforts. In addition to enduring task organizations and OAs, JFCs may tailor theater-level forces or JTFs for the limited duration of the JADO mission. In the future, JFCs will require C2 architectures that support re-task organizing at any point throughout JADO. During JADO, JFCs will activate, expand, shrink, or inactivate OAs and associated fire support coordination measures to adjust to changing situations within the AO. Additionally, JFCs will rapidly reprioritize, change, exchange, and add target groups or individual targets between adjacent or subordinate commanders.

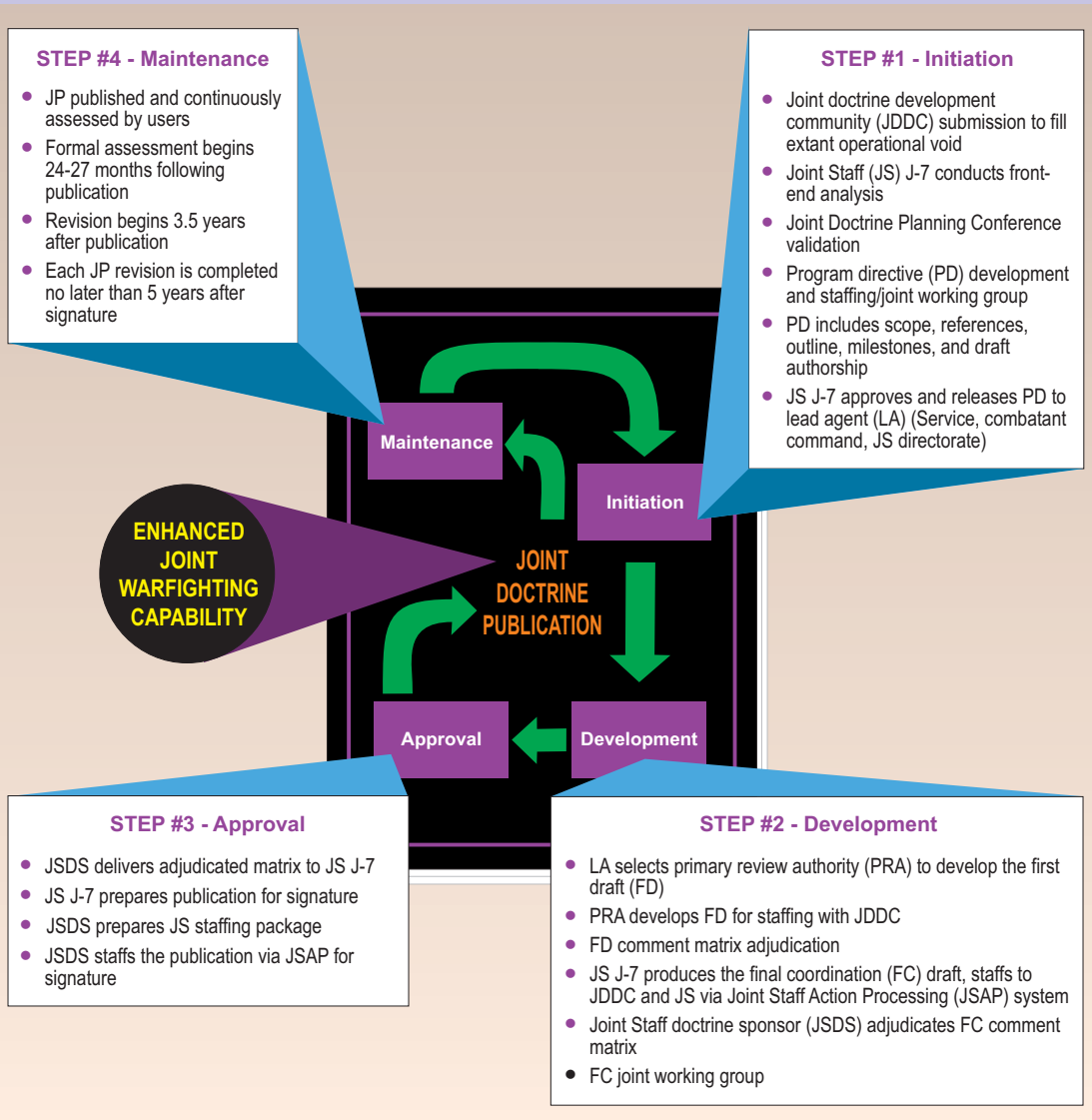
(2) The duration of a JADO mission may be only a matter of hours. At the conclusion or transition from one JADO mission to the next, JFCs can deactivate existing

OAs and fire support coordination measures to allow for new OAs, different task organizations, restructured priorities, new targets, and control measures tailored specifically for the next (or series of follow-on) JADO. This dynamic C2 allows for rapid collection and transfer of information, adaptation of temporary mission sets, and tailored OAs, enabling maximum use of all available fires and the prosecution of time-sensitive targets. JFCs ensure their formations can sense and collect the most vital information, accurately and quickly analyze it, then rapidly and securely disseminate it to the right munition, autonomous system, or platform for action. This approach to tailoring the AOR, theater, or JOA for a particular JADO mission allows JFCs to maintain the vision and flexibility to leverage emerging battlefield opportunities, match the best sensor to the best shooter as quickly as possible, and ultimately influence the behavior of the enemy.

JOINT DOCTRINE PUBLICATIONS HIERARCHY



All joint publications are organized into a comprehensive hierarchy as shown in the chart above. **Joint Publication (JP) 3-0** is in the **Operations** series of joint doctrine publications. The diagram below illustrates an overview of the development process:

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